

## Ground Enterprise Management System, Phase II

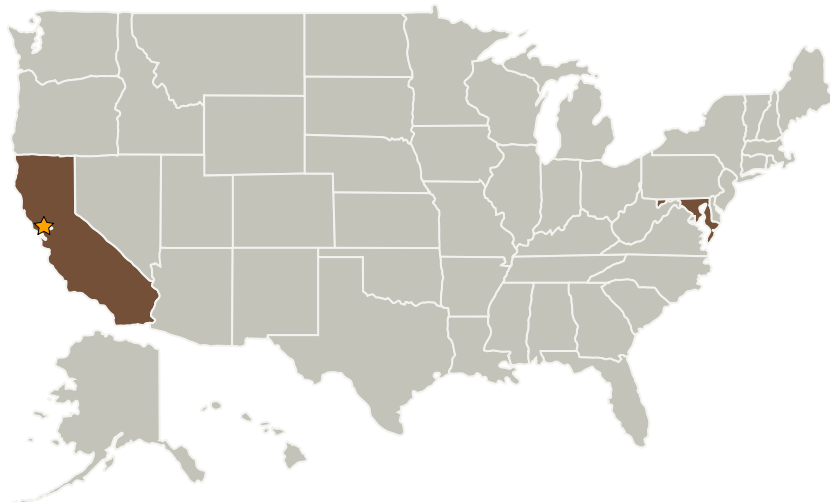
Completed Technology Project (2009 - 2012)



## Project Introduction

Emergent Space Technologies Inc. proposes to develop the Ground Enterprise Management System (GEMS) for spacecraft ground systems. GEMS will provide situational awareness for distributed ground systems, and an understanding of how events and automated actions impact the system in real-time. Recent software advancements have improved sustainability, extensibility, fault tolerance, and ease of automation for ground systems. These traits are important for NASA's missions, from Exploration to Earth and Space Science, but can pose challenges, especially when the system has a high degree of interoperability and communications between components that isn't visible to the end-user. Operators can quickly become overwhelmed with the increased complexity of software components constantly exchanging data and the volumes of information being passed around behind-the-scenes. In fact, for largely distributed systems, as much "situational awareness" is needed for the ground system as for the spacecraft itself. GEMS will provide a centralized integration framework that is needed to provide operators with transparency into the ground system, its state, and its component interactions. GEMS will enhance plug-and-play integrations while providing information management and system coordination. The innovation that enables GEMS is the development of "data-driven" algorithms and software adapters that gather data from the various components of the ground system to construct a data model that captures the system state, organizes the data, and displays it to the mission operators.

## Primary U.S. Work Locations and Key Partners



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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Ames Research Center (ARC)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Emergent Space Technologies, Inc.	Supporting Organization	Industry	Greenbelt, Maryland

## Primary U.S. Work Locations

California	Maryland
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## Project Transitions

**February 2009:** Project Start**August 2012:** Closed out

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX13 Ground, Test, and Surface Systems
  - └ TX13.4 Mission Success Technologies
    - └ TX13.4.2 Team Preparedness and Training